IN THE SPECIFICATION:

Please insert the following new heading after the title before line 1 of page 1:

BACKGROUND OF THE INVENTION

Heading at line 1 of page 1 has been amended as follows:

~~TECHNICAL~~ FIELD OF THE INVENTION

Paragraph beginning at line 2 of page 1 has been amended as follows:

The present invention relates to a permanent magnet which is compact and has a high performance, to ~~motor, for example,~~ a motor including a rotor provided with ~~a~~ the permanent magnet, and to a method for magnetizing the permanent magnet.

Heading at line 4 of page 1 has been amended as follows:

BACKGROUND ~~ART~~ INFORMATION

Paragraph beginning at line 9 of page 2 has been amended as follows:

~~Lead~~ A lead wire is provided inside the magnetizing head, which allows a pulsed DC (several tens of thousands of amperes (A)) to flow therethrough.

Paragraph beginning at line 23 of page 2 has been amended as follows:

In contrast, in the case of using a permanent magnet for an inner rotor type motor, the stator coil is arranged to face the outer circumferential surface of the permanent magnet, so the magnetizing head is provided at an outer circumferential portion of the permanent magnet to magnetize the magnet.

Paragraph beginning at line 8 of page 4 has been amended as follows:

In response to the recent application of the small-sized hard disk top rotatable devices such as the digital camera or information appliances, there are demands for a downsized, energy-saving motor that realizes a high torque~~, as a motor used in these~~.

Paragraph beginning at line 16 of page 4 has been amended as follows:

When the magnetizing head is downsized, a lead wire used therefor is thinned. A direct current supplied to the magnetizing head ~~reduces because,~~ is reduced, in part, because of the withstand voltage of the magnetizing head. As a result, there is a problems that full magnetization (magnetic

saturation) for the permanent magnet is not always allowed and the ability inherent in the magnetic material cannot be completely brought out.

Paragraph beginning at line 23 of page 4 has been amended as follows:

It is therefore an object of the present invention to provide a permanent magnet ~~for a motor,~~ which is compact and has a high performance, a motor equipped with the permanent magnet, and a method for magnetizing ~~method~~ the permanent magnet.

Heading at line 2 of page 5 has been amended as follows:

~~DISCLOSURE~~ SUMMARY OF THE INVENTION

Paragraph beginning at line 14 of page 5 has been amended as follows:

Also, the permanent magnet for the motor ~~according to claim 1~~ of the present invention is characterized in that the permanent magnet ~~for the motor~~ is formed of an Sm-Co based magnetic material.

Paragraph beginning at line 12 of page 6 has been amended as follows:

Also, the motor ~~according to claim 3~~ of the present invention is characterized in that the permanent magnet is formed of an Sm-Co based magnetic material.

Paragraph beginning at line 15 of page 6 has been amended as follows:

Further, in order to attain the above-mentioned ~~objet~~ object, the present invention provides a magnetizing method for magnetizing a cylindrical permanent magnet disposed to a rotor for the motor so that domains that are magnetized in a radial direction are arranged at regular intervals in a circumferential direction, the permanent magnet being configured so that, provided that D represents an inner diameter of the permanent magnet, t represents a thickness in the radial direction, N represents the number of poles, and M represents the number of AC phases for driving the motor, D is set to 20 (mm) or smaller and t is set to satisfy the relation of $t \leq \pi D/(NM - \pi)$, the method being characterized by including: a one-direction magnetization step of magnetizing the permanent magnet in one direction which is the radial direction; and a pole magnetization step of magnetizing the permanent magnet magnetized in the one direction in the one-

direction magnetization step to domains that inverse the magnetizing direction at regular intervals in the radial direction.

Paragraph beginning at line 8 of page 7 has been amended as follows:

Also, the magnetizing method ~~according to claim 5~~ of the present invention is characterized in that the permanent magnet is formed of an Sm-Co based magnetic material.

Paragraph beginning at line 12 of page 7 has been amended as follows:

FIG. 1 is a sectional view taken along the axial direction~~, which shows~~ of a motor according to an embodiment of the present invention.

Paragraph beginning at line 17 of page 7 has been amended as follows:

FIG. 3 schematically shows a section taken along the line ~~A-A~~ 3-3 ~~of the motor~~ in Fig. 1.

Paragraph beginning at line 19 of page 7 has been amended as follows:

~~FIG. 4 shows~~ Figs. 4A-4B show an outer shape and magnetic poles of a permanent magnet.

Paragraph beginning at line 21 of page 7 has been amended as follows:

~~FIG. 5 is a~~ Figs. 5A-5C are schematic ~~diagram~~ diagrams showing a stator core and a permanent magnet as viewed from the axial direction.

Paragraph beginning at line 3 of page 8 has been amended as follows:

~~FIG. 7 illustrates a difference~~ Figs. 7A-7C illustrate differences between an isotropic magnetic material and an anisotropic magnetic material.

Paragraph beginning at line 8 of page 8 has been amended as follows:

~~FIG. 9 shows~~ Figs. 9A-9B are schematic views showing a magnetizing head.

Heading at line 9 of page 8 has been amended as follows:

~~BEST MODE FOR CARRYING OUT THE INVENTION~~ DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Paragraph beginning at line 19 of page 11 has been amended as follows:

The rotor portion 7 takes a convex disc-like shape having a step 8. The cylindrical rotor ~~flame~~ frame 21 is formed at the outer circumferential portion of the rotor 7.

Paragraph beginning at line 8 of page 12 has been amended as follows:

A permanent magnet 3 of 12 poles formed in the cylindrical shape is concentrically attached to the inner circumferential surface of the rotor ~~flame~~ frame 21. A rotational magnetic field generated by the stator coil 4 arranged at the stator portion 2 gives the rotor 7 a torque.

Paragraph beginning at line 6 of page 15 has been amended as follows:

The stator ~~flame~~ frame 16 is formed around the base 17. The stator ~~flame~~ frame 16 is a U-shaped member having formed therein an insertion hole for inserting the base 17 at the center in the radial direction. The stator frame 16 is used to fix the motor 30 to the casing of the hard disc drive by screwing or other such means.

Paragraph beginning at line 12 of page 17 has been amended as follows:

FIG. 3 schematically shows a section of the motor 30 taken along the line ~~A-A~~ 3-3 (FIG. 1).

Paragraph beginning at line 19 of page 17 has been amended as follows:

The permanent magnet 3 is formed concentrically with the rotational shaft 6 at a given gap from the stator core 39. The outer circumferential surface of the permanent magnet 3 is bonded to the inner circumferential surface of the rotor ~~flame~~ frame 21.

Paragraph beginning at line 23 of page 17 has been amended as follows:

The rotational shaft 6, the permanent magnet 3, and the rotor ~~flame~~ frame 21 can be integrally rotated about the stator core 39.

Paragraph beginning at line 7 of page 18 has been amended as follows:

The permanent magnet 3 and 12 divided magnetic domains in the circumferential direction. Each domain is, as described below, magnetized in the radial direction from the

stator core 39 side to the rotor ~~flame~~ frame 21 side or from the rotor ~~flame~~ frame 21 side to the stator core 39 side. The 12 domains constitute the permanent magnet having 12 poles.

Paragraph beginning at line 2 of page 21 has been amended as follows:

~~Also, it is known by those skilled in the art by experience that, in~~ In the case of designing the permanent magnet for a motor, a ratio between the thickness t and the pitch P is set so as to substantially correspond to the number of ~~AC~~ alternating current (AC) phases, so that ~~the~~ a satisfactory motor is obtained, which has less ~~leakage of the~~ magnetic flux leakage and high performance. Provided that M represents the number of AC phases for driving the motor, the empiric formula corresponds to the following expression (2):